

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/710,637	CHANG, CHING-YU	
	Examiner Khanh B. Duong	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to the election filed on January 20, 2006.
2.  The allowed claim(s) is/are 1-12.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All      b)  Some\*      c)  None      of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group I, claims 1-12, in the reply filed on January 20, 2006 is acknowledged.

Furthermore, non-elected claims 13-23 were canceled.

Currently, claims 1-12 remain pending.

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Allowable Subject Matter***

Claims 1-12 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record, taken alone or in combination, fairly discloses all the limitations as claimed.

Re claim 1, none of the prior art of record fairly shows or suggests the following limitations in combination with the rest of the limitations in the claim: removing the second material layer on the trench type outer mark to form a second trench exposing at least a portion of the first deposition layer in the first trench, wherein the second trench serves as a second portion of the trench type outer mark; forming a second deposition layer on the substrate to cover the second material layer and the first deposition layer in the first trench; performing a second chemical mechanical polishing process on the second deposition layer until the second material layer in the second trench is exposed; forming a third deposition layer on the second material layer, wherein a step height is formed on the third deposition layer between the edge of the first

trench and the center of the first trench; and forming a raised feature serving as an inner mark on the third deposition layer.

Re claim 7, none of the prior art of record fairly shows or suggests the following limitations in combination with the rest of the limitations in the claim: patterning the second material layer to form a second raised feature on the first raised feature serving as the other portion of the raised type outer mark on the substrate; forming a second deposition layer to cover the second raised feature and the first deposition layer; performing a second chemical mechanical polishing process on the second deposition layer until a top surface of the second raised feature is exposed; forming a third deposition layer on the second material layer, wherein a step height is formed on the third deposition layer between the edge of the second raised feature and the center of the second raised feature; and forming a third raised feature serving as an inner mark layer on the third deposition layer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following U.S. patents disclose relevant teachings regarding the formation of alignment marks: Allman '662, Zhang '458, Chen '659, Tsai '854, Wong '420, Fu '291, Ebertseder '567, Kawashima '870, Chu '200, Wege '492 and Kuroi '335. However, as

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previously discussed above, none of the prior art of record fairly shows or suggests the indicated allowable limitations in combination with the rest of the limitations in the independent claims 1 and 7.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Duong whose telephone number is (571) 272-1836. The examiner can normally be reached on 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith, can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KBD



Zandra V. Smith  
Supervisory Patent Examiner  
3 April 2020